

Introduction to Drug Utilization Research



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CONTENTS

| | |
|---|-----------|
| Preface: Drug utilization research - the early work | 6 |
| Chapter 1: What is drug utilization research and why is it needed? | 8 |
| 1.1 Definition and domains..... | 8 |
| 1.2 Why drug utilization research?..... | 9 |
| 1.2.1 Description of drug use patterns | 9 |
| 1.2.2 Early signals of irrational use of drugs | 10 |
| 1.2.3 Interventions to improve drug use - follow-up | 10 |
| 1.2.4 Quality control of drug use..... | 10 |
| 1.3 Drug utilization studies and drug policy decisions..... | 11 |
| 1.4 General reading..... | 12 |
| Chapter 2: Types of drug use information | 13 |
| 2.1 Drug-based information..... | 13 |
| 2.1.1 Level of drug use aggregation | 13 |
| 2.1.2 Indication | 13 |
| 2.1.3 Prescribed daily doses | 14 |
| 2.2 Problem or encounter-based information..... | 15 |
| 2.3 Patient information..... | 16 |
| 2.4 Prescriber information | 16 |
| 2.5 Types of drug utilization study | 17 |
| 2.6 Drug costs | 17 |
| 2.7 General reading..... | 18 |
| 2.8 Exercises | 19 |
| Chapter 3: Sources of data on drug utilization | 20 |
| 3.1 Large databases..... | 20 |
| 3.2 Data from drug regulatory agencies | 20 |
| 3.3 Supplier (distribution) data | 20 |
| 3.4 Practice setting data | 21 |
| 3.4.1 Prescribing data | 21 |
| 3.4.2 Dispensing data | 22 |
| 3.4.3 Aggregate data | 22 |
| 3.4.4 Over-the-counter and pharmacist-prescribed drugs | 22 |
| 3.4.5 Telephone and Internet prescribing | 22 |
| 3.5 Community setting data..... | 23 |
| 3.6 Drug use evaluation | 23 |
| 3.7 General reading..... | 24 |
| 3.8 Exercises | 24 |
| Chapter 4: Economic aspects of drug use (pharmacoeconomy) | 26 |
| 4.1 Introduction | 26 |
| 4.2 Cost-minimization analysis..... | 26 |
| 4.3 Cost-effectiveness analysis | 26 |
| 4.4 Cost-utility analysis | 27 |
| 4.5 Cost-benefit analysis..... | 27 |
| 4.6 General reading..... | 28 |
| 4.7 Exercises | 28 |

| | |
|---|-----------|
| Chapter 5: Drug classification systems | 33 |
| 5.1 Different classification systems | 33 |
| 5.2 The ATC classification system..... | 33 |
| 5.3 Ambivalence towards an international classification system | 35 |
| 5.4 Implementation of the ATC/DDD methodology | 36 |
| 5.5 General reading | 36 |
| 5.6 Exercises | 37 |
| Chapter 6: Drug utilization metrics and their applications | 38 |
| 6.1 The concept of the defined daily dose (DDD)..... | 38 |
| 6.2 Prescribed daily dose and consumed daily dose..... | 39 |
| 6.3 Other units for presentation of volume..... | 39 |
| 6.4 Cost | 39 |
| 6.5 General reading | 40 |
| 6.6 Exercises | 41 |
| Chapter 7: Solutions to the exercises | 74 |
| Acknowledgements | 84 |

PREFACE:

DRUG UTILIZATION RESEARCH - THE EARLY WORK

The development of drug utilization research was sparked by initiatives taken in Northern Europe and the United Kingdom in the mid-1960s (1, 2). The pioneering work of Arthur Engel in Sweden and Pieter Siderius in Holland (3) alerted many investigators to the importance of comparing drug use between different countries and regions. Their demonstration of the remarkable differences in the sales of antibiotics in six European countries between 1966 and 1967 inspired WHO to organize its first meeting on «Drug consumption» in Oslo in 1969 (4). This led to the constitution of the WHO European Drug Utilization Research Group (DURG).

The pioneers of this research understood that a correct interpretation of data on drug utilization requires investigations at the patient level. It

became clear that we need to know the answers to the following questions:

- why drugs are prescribed;
- who the prescribers are;
- for whom the prescribers prescribe;
- whether patients take their medicines correctly;
- what the benefits and risks of the drugs are.

The ultimate goal of drug utilization research must be to assess whether drug therapy is rational or not. To reach this goal, methods for auditing drug therapy towards rationality are necessary.

The early work did not permit detailed comparisons of the drug utilization data obtained from different countries because the source and form of the information varied between them. To overcome this difficulty, researchers in Northern Ireland (United Kingdom), Norway and Sweden

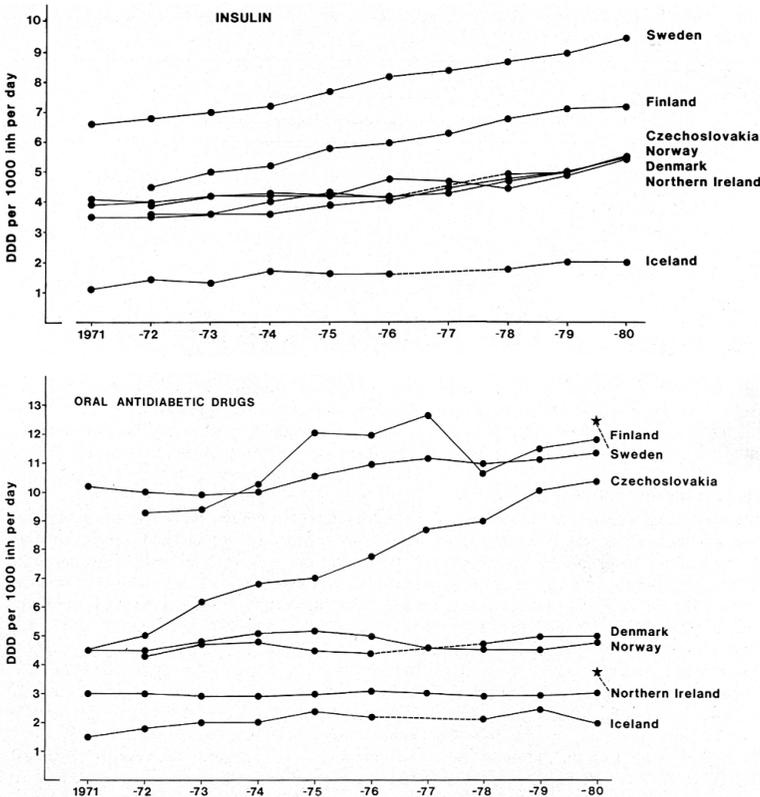


Figure 1 Utilization of insulin and oral antidiabetic drugs in seven European countries from 1971-1980 expressed in defined daily doses (DDDs) per 1000 inhabitants per day. For comparison the prescribed daily doses (PDD) per 1000 inhabitants per day of oral antidiabetic drugs are given for Northern Ireland (UK) and Sweden for 1980 (indicated with an asterisk).

developed a new unit of measurement, initially called the agreed daily dose (5) and later the defined daily dose (DDD) (6). This unit was defined as **the average maintenance dose of the drug when used on its major indication in adults**. The first study used antidiabetic drugs as an example: it was found that the sum of the DDDs of insulin and oral antidiabetic drugs (about 20 DDDs per 1000 inhabitants per day) roughly corresponded to the morbidity due to diabetes after correction for the number of patients treated with dietary regimens alone. Among the first countries to adopt the DDD methodology was the former Czechoslovakia (7) and the first comprehensive national list of DDDs was published in Norway in 1975 (8). Another important methodological advance was the adoption of the uniform anatomical therapeutic chemical (ATC) classification of drugs (see chapter 5.2). The use of standardized methodology allowed meaningful comparisons of drug use in different countries to be made (Fig. 1).

Drug utilization research developed quickly during the following 30 years and soon became a respectable subject for consideration at international congresses in pharmacology, pharmacy and epidemiology. Particularly rapid developments were seen in Australia (9) and Latin America (10). The number of English-language papers on the subject listed in the *Cumulative index medicus* rose from 20 in 1973 (when the term «drug utilization» first appeared) to 87 in 1980, 167 in 1990, and 486 in 2000.

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